President's Message

Kirk Peck, PT, PhD, CSCS, CCRT

APTA Combined Section

The ARSIG was proud to host an outstanding educational session during the 2016 APTA Combined Sections Meeting in Anaheim, CA. The two-hour programming highlighted the sport of Olympic equestrian show jumping and was presented by Sharon Classen, PT, and Mark Revenaugh, DVM. The speakers combined their expertise in giving a remarkable talk on common injuries associated with the sport including observations on biomechanical faults of both rider and horse. An exceptional highlight of the presentation was the use of multiple interactive videos displaying the skill of elite competitive equestrians from prior Olympic competitions. The integration of clinical reasoning during case study analysis from the perspective of both veterinarian and physical therapist was also well worth the price of admission, even without the luxury of hot buttered popcorn.

Notice Anything Different Lately?

I urge you to log on to the ARSIG's website and ask one simple question, *"Hum, does anything look new on the site today?"* Did you miss it…then look again. Yes, it is true, the SIG has finally adopted an official logo and as a bonus it includes color! The SIG officers finally concluded that there are only so many ways to depict a horse, a dog, and a cat without violating good humor laws, so a decision was made to call in the experts. A professional graphic artist was consulted to design a logo that can be used for years to come, and without causing undue stress to anyone who might be offended by amateur alternatives.

Practice Analysis Update

The Practice Analysis survey has now advanced to pilot-study review. A select group of physical therapists in animal rehabilitation will review the survey and provide final suggestions and edits before surveying the entire ARSIG membership. Conducting a practice analysis is a vital "next step" in the process of legitimizing the option for physical therapists to treat animals on a professional level. The goal is to disseminate a description of practice to educate the public at large on what competencies physical therapists exhibit when treating animals beyond the act of just loving them as companion pets like millions of others. Point being, it is time to get serious about the practice of animal rehab, and the only way to move the profession forward in a positive way is to define the competencies physical therapists possess through valid research methods.

California Veterinary Medical Board

You must think I love California for all the type-space dedicated to the state over the past couple of years. However, it is a state in constant need of attention by the physical therapy profession. Karen Atlas has been outstanding in keeping the SIG informed as to what is happening in California, so I thank her again for remaining vigilant to the constant change in action by the Vet Medical Board (VMB). It remains a mystery as to exactly what the next steps will entail to address concerns by the VMB, but it is quite possible that legislative involvement will be part of the picture. Regardless of where things lead next there is one absolute, physical therapists involved in animal rehab in California need to absolutely be engaged in the process. To be engaged means to lend a voice during public hearings, to write letters in support of physical therapists treating animals, and to attend public VMB meetings when possible.

Evidence in Action

In this edition of *OPTP,* I would like to openly express my gratitude to both Stuart Bliss, DVM, and Charlie Evans, PT, for sharing their wisdom on the topic of iliopsoas conditions common to the canine client. Charlie graciously accepted a personal invitation to submit an educational piece in support of the ARSIG's mission to disseminate evidence to enhance knowledge on a more global perspective. So thank you Charlie and Stuart; you are great representatives to the practice of animal rehabilitation.

Time to Share Your Story

I offer to all ARSIG members a "golden" opportunity to once again submit ideas or concepts you wish to see addressed in future editions of *OPTP*. The ARSIG is always open to fresh insights on member interests, but I cannot read minds. So please do not hesitate to articulate your aspirations. Send an email or give me a call to share your thoughts on how to continually improve the value of being an ARSIG member.

Engagement is for Everyone

I am going to finish this edition of the President's Message with a bit of philosophical rambling, but rambling on something of vital importance. The topic is the act of engagement and why, now more than ever, physical therapists who treat animals absolutely need to get actively engaged, and there are many avenues to make this happen. Let me share a few options where the physical therapist voice needs to be heard loud and clear.

1) State legislative and regulatory arenas – Fact is the majority of states do not have codified language supporting physical therapists to legally treat animals. This needs to change, and waiting for a complaint against a personal license is too late. So please review your state practice laws, including language in the veterinary scope of practice to see if physical therapists are allowed in some fashion to legally practice on animals. If language is void, then assuming PTs can simply cross over from humans to treat animals under the auspice as a physical therapist is taking a significant liability risk.
2) ARSIG involvement – There are several ways to support the ARSIG, and although I have outlined many options in the past, I will repeat one again; it is article submissions. In all honesty it would be wonderful if I had a backlog of articles to review for publication in

OPTP, but unfortunately I do not. The idea of submitting articles is to share knowledge with your colleagues to advance the practice of animal rehab. In other words, it defines the essence of being collegial and supports the overall advancement of animal practice.

3) Run for an elected office – In the next year, the ARSIG will be seeking nominations for the position of Vice President. This will be an excellent leadership opportunity for anyone interested in getting directly involved in the ARSIG and the Orthopaedic Section as well.

Pocket Philosophy

Physical therapy is a unique and specialized profession dedicated to restoring normal movement and function. Since codified laws do not restrict movement as pertaining to only humans, the expertise of physical therapists can subsequently benefit all breathing creations if provided a grain of ingenuity. As some practitioners in the profession migrate toward animal care, the evidence is clear that the skills and competencies defining physical therapy are more than transferable. In fact, based on personal experience working with both canine and equine clients, I can state without hesitation that outcomes resulting from physical therapy involvement to improve the quality of life in animals is truly remarkable. What I hope history records in due time is that physical therapists will have become mainstay providers of animal rehabilitation and integral facilitators of enhancing sport performance in a variety of settings across the country. Dreaming? Of course I am, but what is life for, if not to plant a vision of what could be.

A Salute To Our Most Valued 2- & 4-Legged Heroes!

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Repetitive Strain Injury of the Psoas Muscle in Dogs

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Repetitive overuse of the psoas is a common yet underappreciated cause of mobility impairment in the dog. Sustained contraction, fatigue, and spasm of the psoas musculature develop frequently in dogs with a wide range of orthopaedic or neurologic disorders as they alter their posture to compensate for painful or dysfunctional limbs. This form of repetitive strain injury (RSI) can be difficult to recognize, yet it is a significant cause of pain and decreased mobility, especially in geriatric dogs. Strain-counterstrain is a manual therapeutic technique adapted from the field of physical therapy that can be used to treat psoas muscle strain that develops secondary to injury or surgery. It is also a useful method for preservation and enhancement of mobility in older dogs suffering from chronic progressive degenerative joint disease. This article presents an overview of the pathomechanics, diagnosis, and management of psoas RSI in dogs.

PATHOMECHANICS

The musculoskeletal system is highly interconnected and functionally integrated, and injuries or disorders affecting any one part of this system often lead to secondary problems and malfunction at other sites. For example, the limp that develops in humans following even a mild ankle sprain can lead to flares of secondary lower back pain due to changes in posture and body mechanics at the level of the hip and spine. Physical therapists have long recognized the deleterious changes in posture and movement that develop in humans in response to specific injuries or orthopaedic disorders, and a major goal of physical therapy is to limit this "ripple effect" of secondary pain and dysfunction. Dogs also adopt compensatory postures and patterns of movement in response to injury or orthopaedic disease, and these changes in basic body mechanics can also lead to problems at distant sites. One of the most common examples of this is psoas RSI that develops in association with pain and dysfunction of a hind limb.

Hind limb lameness is the most common form of mobility impairment in the dog. Disuse or offloading of a hind limb results in several characteristic postural changes including low and extended head carriage, elbow abduction, sloping of the topline with elevation of the pelvis above the level of the scapulae, and hunching or "roaching" of the lumbar vertebral column into an abnormally kyphotic conformation (Figure 1). These adaptive changes are designed to shift a dog's center of gravity towards the forequarters and offload the hind limbs. Lumbar roaching is a consistent postural adaptation to hind limb lameness; the psoas musculature is one of the primary structures responsible for maintaining the lumbar spine in a roached position.

The psoas system consists of several muscles that originate along the ventral aspect of the cranial lumbar vertebrae and that insert on the pelvis and proximal femur. The major component of the psoas system is the iliopsoas, which inserts on the lesser trochanter of the femur. The iliopsoas is an important flexor of the hip. The psoas system as a whole also functions to flex the lower spine and draw the pelvis forward under the body. Such lumbar flexion occurs normally during certain gaits such as the gallop. However, in response to hind limb lameness, the psoas musculature is recruited into a postural role and undergoes sustained contraction to maintain lumbar flexion.

DIAGNOSIS

Two forms of psoas muscle injury are recognized in dogs. The classic form is a sprain of the iliopsoas at its musculotendinous junction. This is usually a painful, traumatic injury. Iliopsoas sprain is common in sporting dogs and is often associated with high-intensity activities that subject the hip to forceful extension, such as hard running or certain agility exercises. In con-

Figure 1. This dog shows classic hind limb off-loading posture. Note the elevated pelvis, low head position, and lumbar roaching (increased lumbar flexion).

Figure 2. Strain-counterstrain maneuver, a manual therapy technique for treatment of psoas strain injury being performed on a dog.

trast, RSI is a more insidious form of injury that is uniquely associated with postural adaptations to hind limb lameness.

Repetitive strain injury refers to a syndrome of muscular pain, spasm, and diminished strength that occur as a result of repetitive activity or constant sustained contraction. In dogs with painful hind limb disorders, persistent forward weight shifting imposes a high workload upon the psoas musculature, and leads ultimately to muscle fatigue and RSI. The psoas muscle is predominantly a fast-twitch muscle, and as such is adapted to cycles of transient forceful contraction and rapid relaxation. As forward weight-shifting posture becomes a chronic condition, the fiber type distribution within the psoas musculature will transition from primarily fast-twitch muscle fibers to a combination of slow- and fast-twitch fibers (adaptive fiber type switching). However, despite this adaptation, the ability of the psoas to function as a postural muscle remains limited.

Psoas RSI is often a clinically subtle condition and may manifest as stiffness after rest, difficulty rising, reluctance to climb stairs or jump into a vehicle, and general exercise intolerance. Some dogs with this condition exhibit pain on deep palpation of the musculature of the groin; however, more commonly, pain is localized to the mid-body as well as the origins of these muscles on the transverse processes of the third and fourth lumbar vertebrae. This form of strain injury does not cause structural abnormalities within the muscle. Thus, radiography, computed tomography, and magnetic resonance imaging of affected muscles are invariably normal. Diagnosis of this condition is based on physical examination and identification of regions of tight and painful muscle (trigger points) within the psoas system.

Psoas RSI can be difficult to recognize and the pain and dysfunction associated with this condition are often attributed to the primary cause of a given hind limb lameness. For example, psoas RSI is extremely common in dogs with hip dysplasia. Hallmark clinical features of hip dysplasia include stiffness and pain on extension of the hip joint. However, this movement also stretches the psoas musculature; thus, resistance to hip extension may reflect pain both at the level of the hip and the muscles of the lower back. Recognition of these interconnected problems is important since the most effective treatment strategies are those that address both conditions simultaneously.

MANAGEMENT OF PSOAS REPETITIVE STRAIN INJURY

Standard approaches to the treatment of psoas RSI have not been established. In all cases, the primary cause of a given hind limb lameness should be addressed if possible. However, this is often difficult in older dogs, especially those suffering from progressive osteoarthritis of key joints such as the hip, stifle, or tarsus. In such cases, treatment of psoas RSI can nevertheless be of value in enhancing the ability of a dog to compensate for ongoing joint degeneration.

Strain-counterstrain is commonly used manual technique used by physical therapists for treatment of a wide range of human muscle strain injuries. It is an emerging approach to the treatment of psoas RSI in the dog. Muscles affected with RSI become hyper-responsive to elongation and when stretched, undergo vigorous and painful reflexive spasm. Strain-counterstrain involves manipulation of a portion of the body into a position that maximally shortens a strained muscle. This position is held for a brief period before the body is allowed to gently return to a neutral position, and the process is repeated several times. Cyclic passive shortening of a strained muscle resets the level of tension in the muscle through modulation of the afferent signaling of the muscle spindle apparatus to the central nervous system. With time, this recalibration of tonic muscle tension and responsiveness to stretch stimuli facilitates gradual relaxation, relief of spasm, and improved stretch tolerance. The basic strain-counterstrain maneuver used for treatment of psoas RSI involves flexion and gentle outward rotation of the hip while a dog is relaxed and lying on its side (Figure 2). This technique is simple to perform, and when incorporated into an individualized home program of daily exercise, can result in meaningful improvements in comfort level and mobility in an affected dog over time.

Our understanding of whole-body adaptations to specific orthopaedic ailments in the dog, and how these can lead to sec-

ondary syndromes of muscular pain and dysfunction is expanding. Many secondary problems respond well to simple and noninvasive manual treatments. Carefully designed programs of exercise and manual therapy can easily be incorporated into home programs, and can be extremely useful tools for long-term preservation of mobility and quality of life in our canine patients.

RECOMMENDED READINGS

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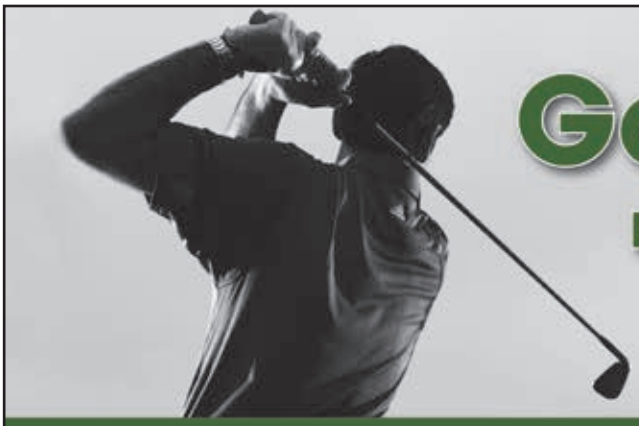

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  Ada Wells, MPT, PMA®-CPT, TPI-Level 3 Medical
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  Brandon Schomberg, DPT, OCS, SCS, CSCS, CGFI-MP3
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